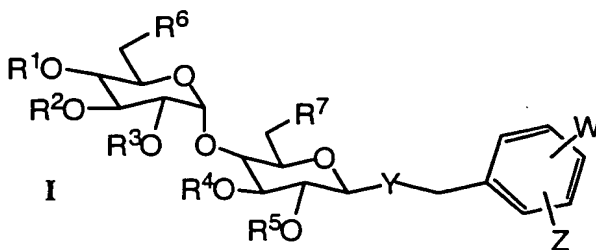


- 54 -

# ABSTRACT

This invention provides smooth muscle cell proliferation inhibitors of formula I having the structure

5

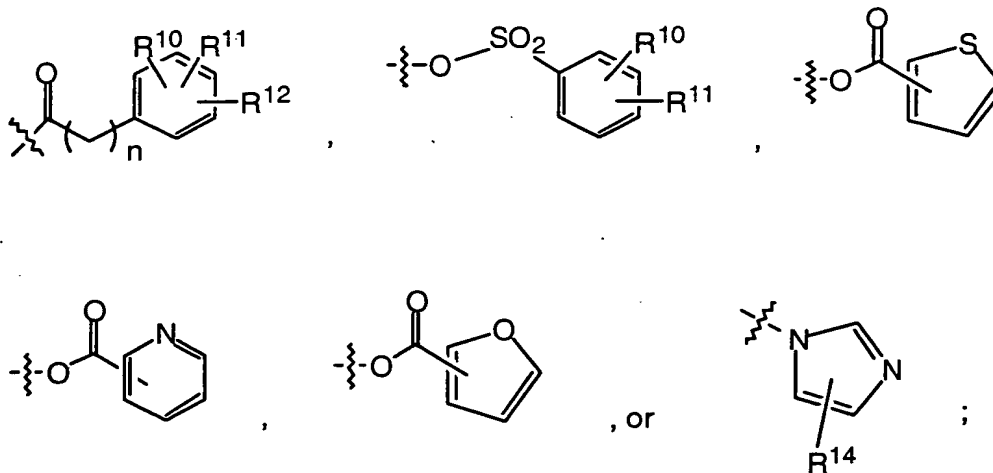


wherein

$R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ , and  $R^5$  are each, independently, hydrogen, acyl of 2-7 carbon atoms, haloacyl of 2-7 carbon atoms, nitroacyl of 2-7 carbon atoms, cyanoacyl of 2-7 carbon atoms, trifluoromethylacyl of 3-8 carbon atoms, or benzoyl in which the phenyl moiety is substituted with  $R^8$ ;

10

$R^6$  and  $R^7$  are each, independently, -OH, -OR<sup>9</sup>, O-tert-butyldimethylsilyl, O-trialkylsilyl of 1-6 carbon atoms per alkyl moiety, O-triphenylsilyl,



15

$R^8$ ,  $R^{10}$ ,  $R^{11}$ , and  $R^{12}$  are each, independently, hydrogen, -CN, -NO<sub>2</sub>, halogen, CF<sub>3</sub>, alkyl of 1-6 carbon atoms, acetyl, benzoyl, or alkoxy of 1-6 carbon atoms;

- 55 -

R<sup>9</sup> is acyl of 2-7 carbon atoms, haloacyl of 2-7 carbon atoms, nitroacyl of 2-7 carbon atoms, cyanoacyl of 2-7 carbon atoms, trifluoromethylacyl of 3-8 carbon atoms, or benzoyl in which the phenyl moiety is substituted with R<sup>8</sup>;

Y is O, S, NH, NMe, or CH<sub>2</sub>;

- 5 W is halogen, -CN, CF<sub>3</sub>, alkyl of 1-6 carbon atoms, haloalkyl of 1-6 carbon atoms, nitroalkyl of 1-6 carbon atoms, cyanoalkyl of 1-6 carbon atoms, alkoxyalkyl of 2-12 carbon atoms, alkoxy of 1-6 carbon atoms, or phenyl mono-, di-, or tri-substituted with R<sup>8</sup>;

Z is -NO<sub>2</sub>, -NH<sub>2</sub>, -NHR<sup>13</sup>, or -NHCO-Het;

- 10 R<sup>13</sup> is acyl of 2-7 carbon atoms, haloacyl of 2-7 carbon atoms, nitroacyl of 2-7 carbon atoms, cyanoacyl of 2-7 carbon atoms, trifluoromethylacyl of 3-8 carbon atoms, benzoyl in which the phenyl moiety is substituted with R<sup>8</sup>, or

- R<sup>13</sup> is an  $\alpha$ -amino acid in which the  $\alpha$  carboxyl group forms an amide with the nitrogen of Z, wherein if said amino acid is glutamic acid or aspartic acid, the  
15 non- $\alpha$  carboxylic acid is an alkyl ester in which the alkyl moiety contains from 1-6 carbon atoms;

Het is pyridyl substituted with R<sup>8</sup>, thienyl substituted with R<sup>8</sup>, furyl substituted with R<sup>8</sup>, oxazolyl substituted with R<sup>8</sup>, pyrazinyl substituted with R<sup>8</sup>, pyrimidinyl substituted with R<sup>8</sup>, or thiazolyl substituted with R<sup>8</sup>;

- 20 R<sup>14</sup> is R<sup>8</sup>, -NH<sub>2</sub>, -CO<sub>2</sub>H, or -NH-acyl of 2-7 carbon atoms;

n = 0-3;

with the proviso that when Z is -NHR<sup>13</sup> and Y is O, at least one of R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, and R<sup>5</sup> is hydrogen, or at least one of R<sup>6</sup> and R<sup>7</sup> is OH, or a pharmaceutically acceptable salt thereof.

25